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## **P13: Risk factors associated with spatio-temporal clusters of high mortality in Danish swine herds**

Ana Carolina Lopes Antunes<sup>1</sup>, Annette Kjær Ersbøll<sup>2</sup>, Kristine Bihrmann<sup>2</sup>, Nils Toft<sup>1</sup>

<sup>1</sup>National Veterinary Institute, Technical University of Denmark, Denmark; <sup>2</sup>National Institute of Public Health, University of Southern Denmark, Denmark

### **Background**

Recently, several studies have explored the potential of using different data streams for syndromic surveillance. Mortality data are recorded to fulfill the European Commission requirements, which ensures a continuous data flow for a surveillance system. The value of using these data, generated on a regular basis and covering the entire swine population, remains unexplored for swine disease surveillance in Denmark.

### **Objective**

The aim of this study was to identify spatio-temporal clusters of high mortality in Danish swine herds and associated risk factors.

### **Materials and Methods**

A total of 5,010 farms were included in the analysis from December 2013 to October 2015, corresponding to 1,896 weaner herds, 1,490 sow herds and 3,839 finisher herds. A retrospective space-time scan statistic was used to identify local spatio-temporal clusters of mortality for each age group: weaners (up to 30 kg), sows and finishers. Logistic regression models were used to assess the potential factors associated with finisher and weaner herds being included inside vs outside the clusters.

### **Results**

Several multiple-herd clusters (i.e. clusters with at least two herds) were found. The herd size affected whether weaner herds were inside the clusters, and factors such farm type, SPF status and presence of atrophic rhinitis had an impact on finisher herds being inside vs. outside clusters in the univariable analysis.

### **Discussion and Conclusion**

The clusters could suggest the presence of infectious diseases within the cluster area. The impact of farm type is linked to the fact that larger farms specialize in only one age group, with high biosecurity and more specialized personnel, and subsequently a lower mortality.

### **Perspectives**

Mortality data have a potential use in disease surveillance. However, detected clusters might not be due to disease, but the result of changes such as herd management practices.